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Term:
```
L12 and ((frame$ with priorit$).clm. or (signal$
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Search History

DATE: Thursday, January 18, 2007   **Purge Queries**   **Printable Copy**   **Create Case**

Set Name side by side	Query	Hit Count	Set Name result set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L13	L12 and ((frame$ with priorit$).clm. or (signal$ with priorit$).clm. or (transmi$ with priorit$).clm.)	1	L13
L12	l9 or l10 or l11	46	L12
	DB=PGPB,USPT; THES=ASSIGNEE; PLUR=YES; OP=OR		
L11	(3838264 | 4269281 | 4245315 | 4150428 | 4127768 | 6112152 | 20030221668 | 4034194 | 4108358 | 5995898 | 4191996 | 4158431 | 20030086226 | 4044634 | 4245314 | 4208929 | 4255789 | 4122996)![PN]	18	L11
	DB=USPT,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L10	("4339801"| "6732044"| "DE 3011057A"| "US20030158649A"| "GB 2273484A")[ABPN1,NRPN,PN]	5	L10
L9	("4339801"| "6732044"| "DE 3011057A"| "US20030158649A"| "GB 2273484A")[URPN]	23	L9
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L8	L3 and (frame$ same priorit$)	0	L8

L7	L3 and (frame$ with priorit$)	0	L7
L6	L3 and (signal$ with priorit$)	1	L6
L5	L3 and (transmi$ same priorit$)	0	L5
L4	L3 and (transmi$ with priorit$)	0	L4
L3	6732044.pn. or 4339801.pn.	5	L3
L2	L1	2	L2

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

| L1 | 6732044.pn. or 4339801.pn. | 2 | L1 |

END OF SEARCH HISTORY

Hit List

Search Results - Record(s) 1 through 5 of 5 returned.

☐   1.   Document ID: US 6732044 B2

L3: Entry 1 of 5   File: USPT   May 4, 2004

US-PAT-NO: 6732044
DOCUMENT-IDENTIFIER: US 6732044 B2

TITLE: Vehicular electronic control apparatus

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   2.   Document ID: US 4339801 A

L3: Entry 2 of 5   File: USPT   Jul 13, 1982

US-PAT-NO: 4339801
DOCUMENT-IDENTIFIER: US 4339801 A

TITLE: Automatic control system for method and apparatus for checking devices of an automotive vehicle in use with a microcomputer

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   3.   Document ID: JP 3842144 B2, US 20030158649 A1, DE 10243589 A1, JP 2003247453 A, CN 1439973 A, US 6732044 B2, CN 1231851 C

L3: Entry 3 of 5   File: DWPI   Nov 8, 2006

DERWENT-ACC-NO: 2003-745639
DERWENT-WEEK: 200673
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TITLE: Vehicular electronic control unit (ECU) for fuel supply control of engine, has core integrated circuit (IC) that generates and outputs control signals based on input signals from control object devices and digital signals from ancillary ICs

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   4.   Document ID: GB 2273484 A, CA 2102769 C, DE 4339801 A1, CA 2102769 A, GB 2273484 B

L3: Entry 4 of 5   File: DWPI   Jun 22, 1994

DERWENT-ACC-NO: 1994-178356
DERWENT-WEEK: 199826
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TITLE: Encapsulated acid compsn used to treat oil wells - comprises aq. soln. of
acid encapsulated in polymeric material.

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

☐   5.   Document ID: DE 3011057 A, FR 2460231 A, GB 2046964 A, GB 2046964 B, US
31582 E, US 4339801 A

L3: Entry 5 of 5   File: DWPI   Oct 2, 1980

DERWENT-ACC-NO: 1980-J8157C
DERWENT-WEEK: 198041
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TITLE: Motor vehicle automatic control microprocessor - has input stage, central
control unit, ROM and RAM assembly and output stage with connectable testing system
which can trigger alarm

| Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw D |

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Terms	Documents
6732044.pn. or 4339801.pn.	5

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L13: Entry 1 of 1   File: USPT   Oct 12, 1999

US-PAT-NO: 5964811
DOCUMENT-IDENTIFIER: US 5964811 A

TITLE: Control method and apparatus for diagnosing vehicles

DATE-ISSUED: October 12, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Ishii; Toshio	Mito			JP
Mukaihira; Takashi	Katsuta			JP
Takaku; Yutaka	Katsuta			JP
Kawano; Kazuya	Katsuta			JP
Miura; Kiyoshi	Naka-gun			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hitachi, Ltd.				JP	03

APPL-NO: 08/877857   [PALM]
DATE FILED: April 18, 1997

PARENT-CASE:
This application is a continuation of application Ser. No. 08/102,967, filed on
Aug. 6, 1993, now abandoned.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	4-210051	August 6, 1992

INT-CL-ISSUED: [06] G06G 7/76

INT-CL-CURRENT:

TYPE	IPC			DATE
CIPS	F02	D	41/26	20060101
CIPS	F02	D	41/00	20060101
CIPS	F02	D	41/22	20060101

US-CL-ISSUED: 701/29; 701/31, 701/35, 701/114, 701/102, 73/116, 73/117.2, 340/438,
340/825.52, 123/479
US-CL-CURRENT: 701/29; 123/479, 340/438, 340/825.52, 701/102, 701/114, 701/31,
701/35, 73/116, 73/117.2

FIELD-OF-CLASSIFICATION-SEARCH: 364/431.01, 364/431.04, 364/431.03, 364/431.055, 364/423.098, 364/424.034, 364/424.037, 364/424.038, 364/424.039, 364/424.04, 340/438, 340/439, 340/825.11, 340/825.52, 340/825.54, 73/117.3, 73/118.1, 73/116, 73/117.2, 701/35, 701/31, 701/32, 701/33, 701/114, 701/115, 701/102, 701/29, 123/479, 123/481, 123/436, 123/690, 123/480
See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected   Search ALL   Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	Re31582	May 1984	Hosaka et al.	364/431.04
☐	4276600	June 1981	Hartford et al.	364/431.06
☐	4339801	July 1982	Hosaka et al.	364/431.04
☐	4346443	August 1982	De Angelis et al.	364/431.04
☐	4676215	June 1987	Blocher et al.	123/489
☐	4926352	May 1990	Staffe	364/431.01
☐	5050562	September 1991	Ishii et al.	123/489
☐	5091856	February 1992	Hasegawa et al.	364/424.045
☐	5157610	October 1992	Asano et al.	364/424.038
☐	5157613	October 1992	Williams et al.	364/431.08
☐	5263453	November 1993	Wakahara et al.	123/436
☐	5331560	July 1994	Tamura	364/431.12
☐	5491631	February 1996	Shirane et al.	364/431.11

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
36 31 200	March 1988	DE	

OTHER PUBLICATIONS

Translation of communication from German Patent Office dated Nov. 9, 1994.

ART-UNIT: 361

PRIMARY-EXAMINER: Louis-Jacques; Jacques H.

ATTY-AGENT-FIRM: Evenson, McKeown, Edwards & Lenahan P.L.L.C.

ABSTRACT:

A diagnostic and control system first checks the current operation status of the vehicle engine, when a malfunction or abnormal condition is detected by diagnostic sensors. A selection of optimum corrective measures is then made and carried out taking into account the safety of the vehicle, based on current operational status of the engine. For this purpose, a set of prioritized corrective measures is determined beforehand for each of the individual monitored items, according to detected changes in the engine operating status. The individual control measures are selected considering the safety of the vehicle, possible measures to correct the malfunction, assuring vehicle operability, and maintaining appropriate engine operating parameters such as exhaust gas mixture, fuel consumption and the like.

37 Claims, 28 Drawing figures

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L13: Entry 1 of 1   File: USPT   Oct 12, 1999

DOCUMENT-IDENTIFIER: US 5964811 A
TITLE: Control method and apparatus for diagnosing vehicles

US Reference Patent Number (3):
4339801

CLAIMS:

1. Method of controlling operation of a vehicle having an internal combustion
engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying
predetermined malfunctions of each of said subsystems, and storing said prioritized
counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output
signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least
one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected
malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of
said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters
thereof in response to control signals from said data processor after
implementation of each of said counter-measures, to·determine effect of said
counter-measures;

wherein said selected sequence of corrective measures includes alternative
corrective measures for differing operating conditions of said subsystems, and
wherein said step of sequentially implementing said corrective measures includes
selection of alternative corrective measures in response to changes in operating
status of said subsystems sensed in said testing step.

2. Method of controlling operation of a vehicle having an internal combustion
engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying
predetermined malfunctions of each of said subsystems, and storing said prioritized
counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output
signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said <u>prioritized</u> counter-measures to modify operation of said system in response to control <u>signals</u> from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said step of sensing operating parameters includes detection of an engine misfire in a combustion cylinder of said vehicle, wherein control of an accidental or improper fire has priority over control of malfunctions of other subsystems of said vehicle;

wherein said step of sensing operating parameters includes sensing engine speed and engine load of said vehicle; and further comprising

additional steps wherein if a misfire is detected when said engine speed is in an idling range or said engine load is smaller than a predetermined value, a first check is made to detect ignition abnormalities in said vehicle and if such an abnormality is detected, to correct such abnormality by increasing magnitude and duration of an ignition current provided to said combustion cylinder;

an additional step wherein if a misfire is detected when said engine load is greater than said predetermined value, fuel supply to said combustion cylinder is interrupted for a predetermined period of time and then resumed;

an additional step wherein if said misfire continues after interruption of said fuel supply, magnitude and duration of an ignition current provided to said combustion cylinder are increased;

an additional step wherein if said misfire is not corrected, fuel supply to said combustion cylinder is stopped; and

the further step of modifying operation of other combustion cylinders firing before and after said combustion cylinder in which said misfire is detected, by one of: decreasing fuel flow or retarding ignition timing to said other cylinders.

3. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system; and

wherein said step of sensing operating parameters includes sensing one of engine intake air flow and engine exhaust gas temperature; and comprising the following additional steps

an air fuel ratio of said engine of said vehicle is controlled by an air-fuel feedback signal having a periodic cycle; and

if a malfunction of said exhaust catalyst is detected when said sensed one of engine intake air flow and engine exhaust gas temperature is smaller than a predetermined value, said cycle of said air-fuel feedback signal is shortened.

12. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system;

wherein said vehicle has an air-fuel ratio feedback control system responsive to an O.sub.2 sensor located upstream of said exhaust catalyst; and

wherein said step of sensing operating parameters includes:

sensing a degradation index of said O.sub.2 sensor located upstream of said exhaust catalyst;

comparing said degradation index to a first predetermined value;

if said degradation index is less than said first predetermined value, changing a gain of said air-fuel ratio feedback control system in response to magnitude of said degradation index.

17. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system;

wherein said vehicle has an air-fuel ratio control system responsive to output signals from an O.sub.2 sensor in an exhaust line thereof, which control system can use either of a feedback (closed loop) control process or an open loop control process, said step of sensing operating parameters includes sensing heater current of said O.sub.2 sensor to detect an abnormal condition thereof; and

wherein said sequence of corrective measures comprises the steps of:

comparing at least one of intake air flow and exhaust gas temperature of said vehicle with a first preset value; and

if it is less than said preset value, air-fuel ratio feedback control responsive to output signals from said O.sub.2 sensor is stopped.

22. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output
signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least
one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected
malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of
said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters
thereof in response to control signals from said data processor after
implementation of each of said counter-measures, to determine effect of said
counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust
catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust
gas recirculation valve, second air supply and fuel control system;

wherein said vehicle has an air-fuel ratio control system which can use either a
feedback (closed loop) learning control process or an open loop control process;
and

wherein said step of sensing operating parameters comprises sensing pressure of
said evaporative fuel system to detect an evaporative fuel leak; and comprising an
additional step wherein if said evaporative fuel leak exceeds a predetermined
value, learning control of said air-fuel ratio control system is stopped.

25. Method of controlling operation of a vehicle having an internal combustion
engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying
predetermined malfunctions of each of said subsystems, and storing said prioritized
counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output
signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least
one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected
malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of
said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters
thereof in response to control signals from said data processor after
implementation of each of said counter-measures, to determine effect of said
counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust

catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system;

wherein said step of sensing operating parameters comprises sensing intake air pressure of said vehicle to detect exhaust gas recirculation flow of said exhaust gas recirculation valve; and

wherein said sequence of corrective measures comprises the steps of:

comparing exhaust gas recirculation flow with a first predetermined value;

if it exceeds said predetermined value, checking for new air leaks; and

if no new air leak is found, adjusting said air-fuel ratio to make it richer.

29. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system;

wherein said vehicle has an air-fuel ratio control system which utilizes a feedback control process;

wherein said step of sensing operating parameters includes sensing output characteristics of an O.sub.2 sensor downstream of a secondary air outlet of said vehicle to detect and evaluate an abnormality of an air shut off valve of said secondary air supply; and

wherein said sequence of corrective measures comprises the step of

if said air shut off valve is determined to be frozen in an open position, stopping feedback control of said air-fuel ratio control system.

32. Method of controlling operation of a vehicle having an internal combustion engine and a plurality of subsystems, said method comprising the steps of:

providing a predetermined set of prioritized counter-measures for remedying predetermined malfunctions of each of said subsystems, and storing said prioritized counter-measures in a memory;

sensing operating parameters of each of said subsystems and providing output signals indicative thereof;

processing said output signals in a data processor to detect a malfunction at least one of said subsystems;

selecting a sequence of prioritized counter-measures depending on the detected malfunction and on the sensed operating parameters;

sequentially implementing said prioritized counter-measures to modify operation of said system in response to control signals from said data processor; and

testing said at least one of said subsystems by sensing said operating parameters thereof in response to control signals from said data processor after implementation of each of said counter-measures, to determine effect of said counter-measures;

wherein said system is a vehicle having an internal combustion engine;

wherein said subsystems include at least one of: cylinder ignition, exhaust catalyst, O.sub.2 sensors, O.sub.2 sensor heaters, evaporative fuel system, exhaust gas recirculation valve, second air supply and fuel control system; and

wherein if a malfunction is detected in said fuel control system, said sequence of corrective measures includes the steps of

comparing throttle valve opening of said vehicle with output signals of a hot wire of an air flow sensor in said fuel control system to detect a malfunction of said air flow sensor;

if a malfunction of said air flow sensor is detected, estimating air flow based on throttle valve opening and engine speed.